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EDITED BY R. V. HARVEY, M. A. VANCOUVER, B. C.

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NOTES ON THE DISTRIBUTION OF INSECTS IN BRITISH COLUMBIA.

(By R. V. Harvey).

No one who has studied the insects of our province, if fresh from the study of the forms found in Europe, can have failed to remark the extraordinary similarity of our species and genera to those of the Old World. An entomologist coming straight out here from England would have no trouble in placing in their correct genera nine-tenths of the butterflies he caught in British Columbia; he would even recognize several species as being identical with those of the west of Europe, e.g. **Pontia rapae, Vanessa cardui,** and **atalanta, V. antiopa,** and **Pamphila palaemon** (mandan). Among the moths, too, he would find old acquaintances, such as,—**Deilephila galii, Arctia caia, Peridroma saucia,** and **Scoliopteryx libatrix.** But he would be chiefly struck by the number of species so closely allied to those of Britain as to require a careful examination to differentiate them.

If, however, our entomologist were to make a lengthened stay in Eastern Canada, he would find by no means the same close correspondence between the new fauna and that which he knew at home. He would notice more strange-looking species, and more genera to which he could not assign a name, and whose aspect was decidedly more tropical. Why, he might ask, should a journey of three thousand miles farther west bring me to a fauna much more like that which I left behind in England?

This, then, is the question which I propose to discuss.

There are, first, two facts of which we are very liable to lose sight. The first is that, to the zoogeographer, Europe is not a continent at all, but simply the western portion of the faunal region, known variously as Eurasia, or the Palearctic Region, which extends from the Atlantic coast of Europe to the Behring Straits and the Archipelago of Japan. The fauna of this enormous division is so homogeneous that, in the words of Alfred Wallace, "the majority of the genera of animals in Great Britain and northern Japan are identical." In exemplification of this fact I have noted that, of 124 species of Diptera listed from Japan in 1898 by Prof. Coquillet, 30 were originally described from Europe, (and of these 30 about ten have already been recorded from B. C.); while of the rest he says, "they so closely resemble European forms as to make their specific distinctness an extremely difficult question to decide." Further, out of 83 genera of Japanese Diptera, 73 are represented in North America.

(To be Continued.)

VANCOUVER NATURALISTS' FIELD CLUB.

We note with satisfaction the formation of a Naturalists' Field Club at Vancouver, and wish every success to this new Society. Several field-days, mostly of a botanical nature, were held in September, previous to the first annual meeting, which took place on October 6th. Mr. William Burns, Principal of the Vancouver Normal School, was elected President of the Club and read an interesting paper on the value of local associations. Two other meetings have been held, and papers read by Miss Eaton, on the Lemuridae, and Mr. R. V. Harvey, on Insect Mimicry. Many of our members have joined this club, and we have no doubt that excellent work will be done in the various branches of natural Science.

THE BRITISH COLUMBIA LIST.

A Check List of British Columbian Lepidoptera.

This Catalogue, which has recently been printed by the Provincial Department of Agriculture, is in many respects a great improvement on the last list. Many doubtful names have been omitted, and many new names have been added, while the arrangement is altogether better. At the same time, the studies of our members, and their collecting trips into untrodden parts of the province, will make it necessary from time to time to make corrections and additions to this list.

CORRECTIONS.

On page 15, **Hadena cerviana Sm.** should have been listed as a variety of H. basilinea Fab: not of **H. finitima Guen.**

Page 29, foot, Insert before the name **"nigroangulata Strecker,"** the genus NYCTOBIA (Hulst).

Page 30. For "lariciata Freyer" read **"perbrunneata Taylor."**

For "laquearia H-S," read **"albicapitata Pack."**

Page 33. For "EUCROSTES" read "EUCROSTIS."

Page 26. For "ERASTRIA" read "DRASTERIA."

ADDITIONS.

P. 7. **(Lemonias) macglashani Riv.** .....Boundary.
P. 6. **(Eurymus) emilia Edw.** .....Okanagan, Kaslo.
P. 4. **(Cupido) phileros Edw.** .....Kaslo, Cheam, Hope Mts.
P. 11. **(Sphinx) drupiferarum S&A**.....Kaslo.
P. 17. **(Oncocnemis) barnesii Sm**.....Kaslo.
P. 20. **(Mamestra) vicina Grt**.....Vancouver Island, Kaslo.
P. 26. **(Drasteria) caerulea Grt**.....Vancouver Island.
P. 30. after **Talledega montanata,** insert—CARSIA (Hubn.)
paludata Thunb .....Hope Summit.
P. 34. **(Diastictis) brunneata Thunb** .....Hope Mts.
(Diastictis) denticulodes Hulst....Hope Mts.

ORDER ODONATA.

The following additional records of dragon-flies have been received from Professor J. Chester Bradley of the University of California:—

Lestes disjunctus Say. Male and female, at Downie Creek, Big Bend country, Aug. 13, 1906.

Other species recorded on the same trip were:—**Aeschna constricta, Say, Somatochlora semicircularis Selys, Sympetrum obtrusum Hag,** and a species of Aeschn, perhaps **elepsydra Say,** at 4000 feet on McCullough Creek, July 24.

ORDER DIPTERA—Family Tachinidae.

The Tachina flies are usually short, stout, and bristly; the larvae are parasitic, and play an important part in checking the increse of noxious insects. The female fastens her eggs to the skin of a caterpillar, and they bore their way into their host, and live there till they are full-grown. Nomenclature according to Aldrich's Catalogue, of which the pages are also given.

421 **Cistogaster, Latr.** .....
immaculata Macq. .....Hope Mts.
422 **Gymnosoma, Meig.**
fuliginosa Desv. .....gen. distributed.
423 **Alophora, Desv.**
aeneoventris Will .....Port Renfrew, Vancouver.
428 **Eulasiona, Towns.**
comstocki Towns .....Port Renfrew.
440 **Dionaea, Desv.**
nitoris Coq. .....Victoria, Vancouver.
445 **Plagia, Meig.**
americana v d Wulp .....Port Renfrew, Vancouver.
449 **Belvosia, Desv.**
bifasciata Fab. .....New Westminster.
450 **Aphria, Desv.**
ocypterata Towns .....Victoria.
450 **Ocyptera, Latr**
carolinae Desv. .....Victoria, Vancouver.
dosiades Walk. .....gen. distributed.
453 **Panzeria, Desv.**
radicum Fab (ampelus Wlk).....Vancouver, Goldstream.
453 **Gymnochaeta, Desv.**
alcedo Loew. .....Vancouver.
455 **Exorista, Meig.**
cheloniae Rond. .....Victoria.
blanda O. S. .....Vancouver.
462 **Frontina, Meig.**
frenchii Will. .....Vancouver, Kaslo.
465 **Masicera, Macq.**
chaetoneura Coq. .....Glacier.
469 **Tachina, Meig.**
robusta Towns. .....Vanc. Island.

472 Paraphyto, Coq.
borealis Coq. ..... Glacier, Wellington.
472 Blepharipeza, Macq.
adusta Loew. ..... Victoria, Vancouver.
473 Winthemia, Desv.
quadripustulata Fab. ..... Vancouver.
476 Metopia, Meig.
leucocephala Rossi ..... Vancouver.
478 Gonia, Meig.
capitata DeG. ..... Vancouver, Vernon, Kaslo, Wellington.
484 Peleteria, Desv.
robusta Wied. ..... Vanc. Island, Vernon, Kaslo.
tessellata Fab. ..... Vancouver, Vernon, Mt. Cheam.
485 Archytas, Jaenn.
analis Fab. ..... Similkameen.
487 Echinomyia, Dumer.
algenswied ..... Vancouver Island and Coast.
decisa Walk. ..... Glacier, Shawnigan.
palpalis Coq. infumata-Big ..... Victoria.
489 Epalpus, Rond
bicolor Will. ..... Vancouver, Wellington.
signiferus Walk. ..... gen. distributed.
491 Bombyliomyia, B. & B.
abrupta Wied. ..... gen. distributed.

FAMILY TABANIDAE.

The following species have been added to our list in this family since last issue:—

Chrysops frigidus O. S. ..... Hope Mts.
surdus O. S. ..... Port Renfrew.
lupus Whitney ..... Victoria.
Tabanus zonalis Kby. ..... Kaslo.

ORDERS PLECOPTERA AND NEUROPTERA.

The following species of Neuropteroid insects have been kindly determined by Dr. Nathan Banks for collectors in this Province. The list is by no means complete, and the compiler has so many unidentified species in his own collection that he would have preferred to withhold the list for the present. However, at the request of some members, it is printed now, but a supplementary list will be published as soon as the additional material in hand has been examined by Dr. Banks.

(The explanatory notes and English names have been added by ourselves.—Ed.)

ORDER PLECOPTERA.—The "Stone-Flies" are soft-bodied insects with long net-veined wings, the hind pair longitudinally folded under the fore wings. The abdomen generally bears a pair of filaments. They are found along streams, where the larvae live under stones, breathing by gill-tufts. They are of no economic importance.

FAMILY PERLIDAE.

Perlomyia collaris Banks ..... Wellington (type specimen.)
Perlodes signata Hagen. ..... Wellington.
Nemoura cinctipes Banks ..... Wellington. Common in early spring.
Taeniopteryx pacifica Banks .....

ORDER NEUROPTERA. As limited by modern scientists this order now contains insects with a biting mouth, two pairs of membraneous wings with many veins, and having a complete metamorphosis. All are carnivorous, and some aquatic, and many are most beneficial in the number of injurious insects which they destroy.

FAMILY CHRYSOPIDAE.—Lace Wings.

Chrysopa californica Coq. ..... Wellington. Common from end of April.
chlorophana Burm. ..... Wellington.

FAMILY HEMEROBIIDAE—The Aphis-Lions.

Hemerobius pacificus Banks. ..... Wellington. Common in June.
Polystoechotes punctatus Fab. ..... generally distr. July and Aug.

FAMILY MYRMEEONIDAE.—The Ant-lions.

Myrmeleon immaculatus DeGeer. ..... gen. distrib. More commonly noticed in larval state.

FAMILY **RHAPHIDIIDAE.**—Snake-flies.

Rhaphidia adnixa Hagen .....Wellington. Common in May.

FAMILY **SIALIDAE.**—Fish-flies.

Sialis fuliginosa Pict. .....Wellington; end of May.

FAMILY **MANTISPIDAE.**—False Rear-horses.

Mantispa brunnea Say. .....Wellington; rare; August.

ORDER **TRICHOPTERA.**

The Caddis-flies are best known by the curious cases constructed by the larvae, out of leaves, twigs, small stones or sand, at the bottom of streams or ponds. The adult insects are somewhat moth-like, with long thread-like antennae. Most of them are vegetable feeders.

FAMILY **PHRYGANEIDAE.**

Neuronia semifasciata Say. .....Wellington; May to end of July.

FAMILY **LIMNEPHILIDAE.**

Grammotaulius praecox Hagen. .....Wellington; May.
Discosmoecus gilvipes Hagen. .....Cameron Lake. (T. Bryant).
magnificus Banks .....Wellington; rare; September.
Glyphopsyche bellus Banks. ..... " March.
bryanti Banks ..... " March-May; common.
Limnephilus indivisus Walk. ..... " June-July.
gravidus Hagen ..... " Aug.-October.
luteolus Banks. ..... " Sept.-October.
radiatus Say. ..... " Sept.-October.
sitchensis Kol. ..... " October.
externus Hagen. ..... " April.
concolor Banks. ..... " September.
Goniotaulius partitus Walk. ..... " October.
Asynarchus tristis Banks..... " September.
Platyphylax designatus Walk. ..... "
Halesus taylori Banks ..... " common; Aug.-Nov.

FAMILY **RHYACOPHILIDAE.**

Rhyacophila coloradensis Banks .....Wellington.

FAMILY **HYDROPSYCHIDAE.**

Hydropsyche Sp. .....Wellington; common Oct.
Polycentropus Sp. .....Wellington.

COLEOPTERA.—Family **Cicindelidae.**

The "Tiger-beetles," though wholly predaceous, are not of any particular economic value. They are usually of a metallic green or bronze color, and fly up before us on hot dusty roads. The larvae makes a hole in sandy places or beaten paths, and entraps unwary insects. Our coast has but a few species, but the interior of the province is much richer in this family.

Omus Esch .....
2 dejeani Reich .....Vancouver Island and Mainland.
4 audouini Reich .....Victoria.
Cicindela Linn.
18 lonilabris Say. .....Kaslo, Vernon.
c. var., montana Lec. .....Vernon.
25 purpurea Oliv. .....Victoria, Wellington, Vernon.
b. var., graminea Sch. .....Vernon.
c. var., cimarrona Lec. .....Victoria.
32 vulgaris Say. .....Vancouver Island, Vernon, Kaslo.
b. var., vibeff Horn .....Vernon.
33 repanda Dej .....Victoria.
a. var., oregona Lec. .....common everywhere.
c. var., 12-guttatt Dej .....Victoria, Vernon.
34 pusilla Say. .....Vernon, Okanagan Falls.
36 cinctipennis Lec. .....Vernon.
a. var., imperfecta Lec. .....Vernon.

LOCALITY LABELS.

The Secretary has on hand a stock of locality labels on stout paper, which he will supply at two hundred for five cents, assorted as desired, post free to members. The labels are as follows:—Vancouver, New Westminster, Grouse Mt., Mission Jc., Chilliwack, Harrison, Goldstream, Shawnigan, Koksilah, Somenos, Mt. Sicker, Mt. Arrowsmith, Quamichan Lake, Cowichan Bay, Cameron Lake, Kamloops, Sicamous, Nicola, Tulameen, Kaslo, Vernon, Nelson, Field, Rossland, Similkameen, Hope Mts.

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